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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/580,687	05/26/2006	Sebastian Budz	32860-001044/US	4363

30596 7590 12/09/2009
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EXAMINER	
BITAR, NANCY	

ART UNIT	PAPER NUMBER
2624	

MAIL DATE	DELIVERY MODE
12/09/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/580,687	BUDZ ET AL.	
	Examiner	Art Unit	
	NANCY BITAR	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 September 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 May 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's response to the last Office Action, filed 12/24/2008, has been entered and made of record.

2. Applicant has amended claims 1, 5, 7-10, and 16. Claims 1-19 are currently pending.

3. Applicants arguments filed 9/1/2009 have been fully considered but they are not persuasive.

4. Applicant argues that neither Gering nor Golland teach "automatically displacing, as a function of the user input, the at least one projection not including the at least one partial projection in such a way that it includes the partial projection"
In response, Examiner first refers to (page 37, paragraph: Reformatted slice location) of Gering et al that teaches that the users may simply click on a location to change the center of all slices (the focal point) to that point in 3D space. Moreover, Gering figures 2-7 shows shot taken after clicking on the center of the tumor thus all slices were set to have sagittal orientations and different zoom factors. Examiner has used a secondary reference Golland et al (Anatomy Browser: A novel approach to visualization and integration of medical information) as an obvious rejection in order to be more specific in the teaching of the **automatically displacing** since Gering does not explicitly teach that the displacing is done automatically. Golland teaches automatically displacing the 3D surface model by using two separate components of the system:

the back-end component and the user-end interface. The back-end component uses special graphics hardware to render the models and save both intensity and depth information in a special representation called *multilayer images*. The user end interface reads the multilayer images of the scene and generates an image to be displayed for the user. The user end interface reads the multilayer images of the scene and generates an image to be displayed for the user. Since multilayer images contain depth information, the user-end interface supports 3D model manipulation, such as partially transparent surfaces, changes in surface color, and depth queries. Therefore the automatically displacing of the anatomy browser of Golland can be used in Gering et al. All remaining arguments are reliant on the aforementioned and addressed arguments and thus are considered to be wholly addressed herein.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gering ET al (A system for surgical planning and guidance using image fusion and interventional MR) in view of Golland et al (Anatomy Browser: A novel approach to visualization and integration of medical information)

As to claim 1, Gering et al teaches the method for navigating in three-dimensional electronic image data records, the image data records including three-dimensional partial image data records, the method comprising: optically displaying at least two mutually perpendicular two-dimensional projections of an image data record, at least one of the two projections including at least one two-dimensional partial projection of at least one partial image data record (figure 2-5; the outline of the tumor segmentation is drawn in green on an anatomical image on the left, and on vascular image on the right. ; the vascular image is fused with the anatomical image using uniform blending on the left but selective overlay on the right; page 36)

Optically emphasizing the at least one two-dimensional partial projection; functionalizing the at least one optically emphasized partial projection such that the at least one optically emphasized partial projection is selectable by a user input (each reformatted slice may be generated from any of the available data sets; figure 3-1; Page 35, Multiple Volumes, section 2.3.2);

receiving a user input directed toward the selection of the at least one functionalized partial projection; and automatically displacing, as a function of the user input, the at least one projection not including the at least one partial projection in such a way that it includes the partial projection (besides using the sliders on the GUI to position reformatted slices users may simply click on a location to change the center of all slices to that point in 3D space, section 2.3.5; figures 2-7; reformatted slice location).

While Gering meets a number of the limitations of the claimed invention, as pointed out more fully above, Gering clearly teaches that the planes can be displaced through the image volumes by means of control means (page 33, lines 3-4) or by means of a mouse click on an interesting

region of the image in one of the slice planes, the midpoint of all the slice can be overlaid on this 3D point (page 37, lines 15-17) Gering fails to specifically teach automatically displacing as a function of the user input the at least one projection.

Specifically, Golland et al. teaches a novel framework for visualization of 3D models of anatomical structures. In this framework, the visualization process is divided between the back-end system that renders the images and saves them in a special format, and the user-end interface that reads pre-rendered images and displays 3D models, while providing a set of 3D scene manipulation capabilities similar to visualization packages based on true dynamic rendering (see abstract) .Moreover, Golland teaches the use of Anatomy Browser integrates three main types of information: 3D surface models, slice data sets and text. Accordingly, the user-end interface consists of three main components: a 3D display, three slice displays and a hierarchy panel (Fig.4a). In addition to visualization capabilities, Anatomy-Browser provides cross-referencing among all types of displayed information. The user-end interface is implemented as a Java applet, and is therefore platform independent. it would have been obvious to one of ordinary skill in the art to use the Anatomy Browser in Gering in order reduce the amount of information transmitted over the network and thus make remote use of the system feasible. Therefore, the claimed invention would have been obvious to one of ordinary skill in the art at the time of the invention by applicant.

As to claims 2 -4, Gering et al teaches the method as claimed in claim 1, wherein the image data record is formed by fusing at least two source image data records and the partial image data records are formed from the same source image data record (blending images with respective opacity values; multiple volumes on the same slice; section 2.3.3, page 34).

Claim 5-15 differ from claims above only in that claim 1-4 are method claims whereas, claims 5-15 are computer claim. Thus, claims 5-15 are analyzed as previously discussed with respect to claims above.

The limitation of claim 16-19 has been addressed above. As to claim 16, Gering et al teaches the display of medical image data subsets and for navigation therein, for diagnostic purposes, provision being expressly made for the simultaneous display of projections and slice planes from different image data subsets (page 34; Multiple Volumes). The planes can be displayed through the image volumes by means of control elements (page 33, lines 3-5) or by means of a mouse click on an interesting region of the image in one of the slice planes the midpoint of all the slice planes can be overlaid on this 3D point in order to contain the region of the image (page 37, line 15-17). In order to be able to view an interesting image detail in all projection, it would be obvious for the user of the device to first select and display the different image data sets of interest.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NANCY BITAR whose telephone number is (571)270-1041. The examiner can normally be reached on Mon-Fri (7:30a.m. to 5:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vikkram Bali can be reached on 571-272-7415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Nancy Bitar/
Examiner, Art Unit 2624

/Wes Tucker/
Primary Examiner, Art Unit 2624